

**DESCRIPTION OF TWO NEW SPECIES OF AUSTRALIAN CHITONS
WITH ADDITIONAL NOTES AND RECORDS.**

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PLATE VIII.

This paper describes two new species, one contained in a collection of chitons received from Capt. Beresford Bardwell, of Broome, and collected on Augustus Island, Port George IV, North Western Australia, in 1934, and another collected at Cape Jervis, South Australia, in 1937. (Reg. No. D 13282, S.A. Museum.) In addition, notes on a second species from the Broome material and two others from Cape Jervis, one of these being a new record for South Australia, are given.

CHITON (ANTHOCHITON) EXCELLENS Iredale and Hull.

While the valves of the smaller specimens in the Broome material were mostly detached, there were two examples of this species each of which had several valves missing.

Iredale and Hull's type is in the Macleay Museum, Sydney. It was examined by Ashby in 1931 and found to have been sent previously to the British Museum, where it had been identified with *Chiton pulcherrimus* Sowerby from the Philippine Islands.

In 1928 Ashby described *Chiton excellens capricornensis* from a unique example from the Capricorn Group, Queensland. It was pointed out at the time that this specimen differed widely from the figure of the holotype as given by Iredale and Hull. The specimen from Augustus Island differs again in certain respects from both *pulcherrimus* and *capricornensis*, and we would suggest that *excellens capricornensis* and *excellens* s. str. be regarded as subspecies of *pulcherrimus* Sowerby from the Philippines, but this can only be definitely decided by comparison with examples from the latter locality.

Callistochiton augustensis, sp. n.

(Plate viii, figs. 2, 3, 4.)

In the Broome material were six detached valves of this new species.

Description:—

Head Valve.—Unusually flat, with eleven knobby ray ribs, the two outer ones being nearly double the size of the rest and corresponding with the two ribs in the lateral areas of the median valves; the knobs vary from 8 to 12.

Median Valve.—The dorsal area is exceptionally well defined for a member of this genus, is narrow and minutely granulose, the grains being flat-topped, the net-work sculpture usually so well defined in the southern forms is here obsolete. The pleural area is decorated with diagonal rows of rather large, raised, flat-topped grains, mostly touching, the grooves between are deep but no bridging can be detected; there is a slight pectination. The lateral area is much raised and occupied by two knobby ribs, the knobs near the dorsal area are small but increase

rapidly in size towards the girdle, where they become exceptionally large. The tail valve is missing.

Girdle.—This is clothed with thick, deeply grooved all over, imbricating scales, a little smaller than in those of *C. broomensis* Ashby and Cotton; the latter species has shallow, irregular ribbing on the exposed portion only of the scales.

Articulamentum.—Glossy white, translucent, slits 1/1, insertion plate smooth-edged except at the slit where it is turned upward into the rib; this feature is termed "frilling" by Pilsbry and is typical of the genus.

Measurements.—Anterior valve length 2.2 mm., width 4.0 mm.; median valve length 2.6 mm., width 5.0 mm.

Habitat.—Augustus Island, Port George IV, North Western Australia.

Holotype.—In the Ashby Collection, South Australian Museum, Reg. No. D 12952.

Notes.—*C. augustensis* differs from *C. clenchi* Ashby and Cotton and *C. occiduus* Ashby and Cotton in having in the pleural area wavy sub-diagonal coarse granulose ribbing, whereas both *clenchi* and *occiduus* have longitudinal minutely granulose ribbing. In the lateral areas *clenchi* has the nodules widely spaced, in *augustensis* they are close together and different in character. This species differs from *broomensis* in having in the pleural area wavy granulose ribbing, and two lateral ribs instead of long rows of detached mucronate grains, and in the lateral area many radial ribs. The narrow, well-defined dorsal area and the coarsely granulose ribs in the pleural area easily separate this species from any of the southern forms, *C. antiquus* Gould and *C. mawlei* Iredale and Hull.

Three new species of *Callistochiton* were described from North Western Australia in 1934 by Ashby and Cotton,⁽¹⁾ so that we hesitated before describing the above fourth species from that locality. The three earlier species were each represented by single examples, but the characters of each are so well defined and distinct from other described Australian species that such action seems fully justified.

It is extremely interesting that with the addition of this species we now have as many species described from North Western Australia as from the rest of Australia, four in each case. The list of species is as follows:—

- Callistochiton antiquus* Gould with its subspecies *periousia* Iredale and Hull, from Queensland.
- „ *meridionalis* Ashby, from South Australia, with its subspecies *mayi* Ashby, from Tasmania.
- „ *mawlei* Iredale and May (*Callistassecla mawlei* Iredale and Hull), from Tasmania and South Australia.
- „ *generos* Iredale and Hull, from Queensland.
- „ *broomensis* Ashby and Cotton, North Western Australia.
- „ *clenchi* „ „ „ „ „ „
- „ *occiduus* „ „ „ „ „ „
- „ *augustensis*, sp. n.

We cannot follow Iredale and Hull in removing the genus *Lophochiton* from the *Ischnochitonidae* (where Ashby placed it in proposing the genus *Lophochiton*) and placing it with the *Callistochitonidae*, for its insertion plate is entirely *Ischnoid* in character and does not possess the least sign of frilling. The type species of *Lophochiton* is *Callistochiton recens* Thiele with *Lophochiton johnstoni* Ashby as a synonym and with one subspecies *L. granifer* Hull.

⁽¹⁾ Proc. Roy. Soc. Western Australia, vol. xx, pp. 213-219, pl. 13.

***Ishnochiton jervisensis*, sp. n.**

(Plate viii, fig. 1.)

General Appearance.—Elliptical, when alive the girdle is exceptionally wide, flat but slightly carinated, dorsal and pleural areas uniformly decussate and lateral area raised and minutely decussate, the two end valves evenly decussate. Colour: Warm-buff touched up with Light Ochraceous-buff (Ridg. XV).

Head Valve.—Flattish, evenly and minutely decussate except the outer fourth of valve which shows incipient ray ribbing, often only indicated by a single grain; the ray ribs would probably be very noticeable in an example twice the size.

Median Valve.—The dorsal area is indistinguishable from the pleural area except for its more minute granulose sculpture, the grains are very small in the dorsal area and are there arranged diagonally, the granulose character of the sculpture increases in the size of the granules until the girdle is reached, midway the sculpture changes into longitudinal ribs which are slightly curved outwards near the girdle; lateral area raised, rather narrow, the longitudinal arrangement of the granulose sculpture is here lost, this area is evenly minutely decussate, three shallow pustules occur on the posterior margin (probably partially developed new growth ridges).

Tail Valve.—The mucro is well raised at the anterior third, the posterior slope is shallowly concave, the whole valve evenly decussate but the anterior portion is separated from the posterior by a shallow diagonal depression and the anterior decussate sculpture is coarser, two shallow concentric growth grooves are present in the posterior portion.

Girdle.—The girdle in life was strikingly broad and clothed with strongly convex highly polished scales; with the naked eye they much resemble the girdle scales of the genus *Haploplax*, but instead of being smooth are deeply grooved.

Measurements.—Holotype, not disarticulated, the whole dry shell 11 x 6.5 mm.

Notes.—The girdle scales of *I. auratus* Ashby are very minute, thick, flat, without grooving and polished; in *I. cariosus* Pilsbry, juvenile specimens of about the same size, the scales are thin, twice the size and distinctly grooved; in *I. atkinsoni* Iredale and May (= *variegatus* Iredale and Hull, nec. Angas) the scales are curved with striae less well marked than in *I. cariosus* but much less curved and nothing like so deeply grooved as in the above new species. In *I. atkinsoni* Iredale and May (= *variegatus* Iredale and Hull, nec. Angas) the scales are equal to those of *I. cariosus*. They are also nearly as large as the girdle scales of *I. lineolatus* Blainville (= *elongatus* Iredale and Hull, nec. Blainville), but while that species has up to seven striae on each scale, the above new species has 10-12 striae. In *I. lineolatus* Bl. (nec. Iredale and Hull) the scales are only slightly convex and curved down in front, whereas in *I. jervisensis* they are strongly and evenly curved over the whole visible surface of the scale.

Habitat.—In a sheltered pool at low tide, at Cape Jervis, South Australia, January 28, 1937. (Reg. No. D 13282, S.A. Museum.)

NOTOPLAX SPONGIALIS Ashby.

Amongst the South Australian chitons in the collection of Dr. Torr is an example of this species labelled "found in sponge." This is the first record from South Australia, and of the four examples hitherto known three were dredged in "The Channel," Hobart, and the other off Cape Pillar, Tasmania.

Ashby sent to the British Museum the holotype, which had been given to him by the late Lewis May and which has minute and slender spicules on the girdle,

together with two examples of the fairly common Tasmanian form with coarse spicules, asking which of these forms corresponded with "H. Adams' type from Tasmania dating from 1861." Mr. Robson replied that the type in the British Museum has the coarse girdle spicules. As this form was the only one known to collectors until the four dredged examples belonging to Mr. May were found, this was the answer expected.

Iredale and Hull have renamed H. Adams' shell with the coarse spicules *Notoplax subspeciosa* and add the following concluding and inexplicable note: "The series used by Ashby for his types of *spongialis* were the identical ones Iredale had compared with the type of *speciosa* in the British Museum, May having sent them to him for this purpose." Actually May sent one example only to Iredale in London, and gave Ashby an order to collect it on his visit to London in 1922. This was done and the specimen forwarded to Mr. May. The example, however, which Ashby made his type of *spongialis* was already in his own collection.

The example from Torr's collection has evidently at some time been placed in a formalin solution, causing bleaching and damage to sculpture. It has not been possible to compare it with the subspecies from Western Australia, *N. spongialis glauerti* Ashby, 1923.

CALLOCHITON MAYI Torr.

The occurrence of *Callochiton (Icoplax) mayi*, as a littorine shell at Cape Jervis is worth recording; it was taken by the writer on January 28, 1937, in a sheltered pool.

EXPLANATION OF PLATE VIII.

- Fig. 1. *Ischnochiton jervisensis*, Ashby and Cotton. ×8.
 Fig. 2. *Callistochiton augustensis* Ashby and Cotton. Anterior valve. ×9.
 Fig. 3. *Callistochiton augustensis* Ashby and Cotton. First median valve. ×9.
 Fig. 4. *Callistochiton augustensis* Ashby and Cotton. Last median valve. ×9.
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